

A-0238



**THEIR SILENT PROFILE  
Inactive Coal and Metal Mines of Colorado  
COUNTY RESOURCE VOLUME**

in response to  
Title IV (PL 95-87)  
of the Federal Surface Mining Control and Reclamation Act  
1977

and

Title 34-33-133 C.R.S.  
Colorado Surface Coal Mining Reclamation Act  
1979

prepared by

Inactive Mine Program  
Mined Land Reclamation Division  
Colorado Department of Natural Resources

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## DOLORES COUNTY

The inventory of inactive mines in Dolores County centered around the Rico Mining District in the southeastern part of the county. This mining district is in the Rico Mountains about 27 miles southwest of Telluride. The town of Rico nearly centrally located in the district is accessible via Colorado 145. Mines and prospects in the district occur up to 12,000 feet in elevation. Rico itself is on the Dolores River at an elevation of 8,700 feet.

Geologically the ores in the Rico District are found in junctions between fault zones and the sedimentary rocks of the Hermosa formation, a Pennsylvanian unit of shale, sandstone, and limestone. The central core of the mountain is cut by Tertiary Intrusives. Most mining has followed the blanket deposits in the Hermosa formation, although small rich ore deposits are found in the faults themselves.

Production began in the Rico District in 1879 and has continued to the present. Initially the chief metal produced was silver. From 1879 to 1908 it lead all production. More recently zinc has been the most valuable metal with lead almost equalling it in amount produced. There is considerable activity in the district at present and the Anaconda Company has put together a large area for development on the east side of the Dolores River where they have an active hazard abatement program in progress.

## HISTORY OF MINING

In 1970, Dolores County ranked #13 in overall metal production in Colorado with virtually all of the county's production coming from the Rico District. Silver has been the principal product, totalling 40% of the county's mineral value, followed by zinc (24%) and lead (22%). Gold and copper have been unimportant, comprising only eight percent and six percent of the total output, respectively.

The Rico area was the site of considerable activity in early years but it was slow to develop into a mining center. It was not until 1879 that the area started producing consistently although there had been flurries of mining activity near Rico since 1860.

### Early Prospectors and Discoveries

In either 1831 or 1833, trappers with the St. Louis Fur Co. explored the headwaters of the San Juan and Dolores Rivers. It is agreed that they did not find any minerals, however, since Dolores County is a poor producer of placer gold; only about 20 ounces were mined up to 1944.

The first prospectors came into the area during the winter of 1860. They were members of the Baker party which was wintering in Baker's Park, the future site of Silverton. They apparently made a number of trips into the Rico area, but did not stay. Another group of prospectors came into the Dolores drainage in 1866. These men were from Arizona and were under the direction of a Colonel Nash. Neither of the two groups located any metals.

The first ore find was made in 1869 by Sheldon Shafer and Joe Fearheiler (variously spelled Fearheidler and Fearheller). They discovered gold and located the first claims in the area on what would become the Pioneer Mine and the Nigger Baby Mine on Nigger Baby Hill, so-called because of the black oxide of manganese found along outcrops. Shafer and Fearheiler also established the Pioneer (or Rico) Mining District and built the first log cabin up Silver Creek.

In 1870 R.C. Darling came into the area while surveying the southwest borders of Colorado and the Ute Reservation. He was the prime mover behind the next few years' development in the district. Darling located the Atlantic Cable Mine and then left in 1871, only to return the next year with financial backing from Army officers and Washington, D.C. capitalists. He built a small adobe smelting furnace which produced three bars of bullion before it collapsed. The severe winter of 1872 closed down the district, however, and things remained quiet until 1878.

## Lead Carbonate Ore Found

New discoveries made in 1878 included the Grand View and the Black Hawk. Many prospectors came into the area, and in 1879 rich lead carbonate ore was found on Nigger Baby and Newman Hills. This touched off a rush and led to the establishment - at long last - of the town of Rico. As with many new mining camps, a lengthy debate was held over its prospective name. Carbonateville, Lead City, and Dolores City were all early favorites, but they had none of the distinctiveness or simplicity of "Rico", which is Spanish for "rich".

The Pioneer District was on the map to stay. By September 1, there were 105 cabins where a month earlier there had been none. Religion came to town, too, as this snippet from the Dolores News of January 2, 1886 recalls:

"September 28, 1879. Rev. H.P. Roberts, of Silverton, preaches the first sermon in Rico. It was an out doors affair - the collection not being omitted. Immediately after the sermon a large purse was made up for a horse race, and all adjourned to the race track after the benediction."

On Independence Day, 1880, the machinery for the Grand View smelter arrived in Rico, having been brought on wagons all the way from Alamosa, which was then the terminus of the railroad. By November 17 the smelter had been erected and began producing bullion. The next year Dolores County was split off from Ouray County with Rico as the county seat, and the Rico-Durango toll road was completed.

That summer the citizens of Rico also decided to take a punitive ride against the Utes, probably to recover stock which the Indians had taken in May from a ranch near Dolores. The two parties met June 15 in the Little Castle Valley in the La Sal Mountains of Utah and had a shoot-out. The whites came out much the losers of this encounter, with 10 killed and three wounded.

The following year, 1882, was notable for three events in the district. The first occurred May 6, when there was a general uprising against the Chinese inhabitants of Rico. According to the Dolores News, "At midnight all of the Chinese in town were raided, beaten, and robbed. Jig Hume, one of the participants received a severe wound at the hands of one of his own party." Then on June 29 the Rico Mining and Smelting Company put the area's second smelter into operation. Finally, the Newman group of mines was sold for \$175,000, a hefty sum considering that it equalled the entire output of the district to that date.

In the winter of 1882-83, some very rich discoveries were made on the West Dolores River near Dunton Hot Springs. A post office was established and the town named in honor of Colorado Senator Tom Bowen. The prospects never developed, however, and the town soon died.

Rico continued to hold its own. Production surged in 1883 as the rich ore of the South Park Mine along Silver Creek was located, but in the next few years the district's production ebbed, totalling under \$100,000 for '84 and '85.

#### Discovery of the Blanket Deposit

In 1887, however, the area came alive with the discovery of the rich Enterprise blanket deposit on Newman Hill. As early as 1881, David Swickheimer, Patrick Cain, and John Gault had begun a shaft on their Enterprise claim. Failing to strike ore they sold the claim and took up other business prospects. Swickheimer, for example, became county sheriff and the town handyman. As time passed, however, he became more and more convinced that the old claim would pay off. He bought back into it and continued to sink all of his and his wife's money into the venture: money from the sale of his saloon, from his wife's boarding house, and from her winning ticket in the Louisiana Lottery. On October 6, 1887, at a depth of 262 feet, Swickheimer's shaft cut the edge of the blanket deposit which contained the richest minerals in the district. The other mines in the area then dug deeper and hit the same silver-lead blanket. The Black Hawk, Logan, and the Rico-Aspen were especially well positioned to take advantage of Swickheimer's find. Silver production rose rapidly.

Augmenting the boom, on October 15, 1891, the Rio Grande Southern Railroad reached town, setting off a gala celebration. As one local wag described it, "Everybody so inclined got their noses quite damp." That same year, Swickheimer sold the Enterprise to an English syndicate for \$1.25 million. About that time, the Enterprise and the Rico-Aspen were also involved in litigation over which firm had the right to mine a certain area. The two continued producing while the suit dragged on. At its conclusion the court decided that the deposit was rightfully the Enterprise's, but by then the ore in the disputed territory had already been extracted, largely by the Rico-Aspen Company.

The district boomed; the period from 1887-1893 was one of Rico's most productive eras. By 1893, the peak year of the boom, Rico was producing \$2 million worth of silver ore, over 18 times its output before Swickheimer discovered the blanket deposit.

When the crash of 1893 came, however, following the demonitization of silver, Rico was devastated. The population dropped from 10,000 to 150; David Moffat alone laid off 350 miners; and production by 1896 was back down to the level of a decade before.

### Rico in Decline

Production stayed low until the mid-1920's, but a number of changes occurred in the district over that period. The first of several mine consolidations took place in 1898 and '99 as the Knight Investment Co. bought up several mines and started working them, but litigation was so intense that the company gave up the effort by 1900. In 1901, a more successful attempt at consolidation occurred as the United Rico Mining Co. acquired the Rico-Aspen, Enterprisc, Atlantic Cable, Grandview, and other properties. Even United Rico could not generate much production, however; from 1900 to 1911 the county's output was always less than \$200,000 per year. A few attempts to renew production at the Pro Patria were likewise futile, even though its operators were targeting the metals of the future - copper, lead, and zinc - rather than silver. This shift in emphasis would eventually pay off. By 1912 the county's copper output was valued higher than its silver, and in 1913 silver was fourth behind lead, zinc, and copper. Rico had entered a new era; its silver days were past.

By 1925 the town had a population of 1,200 and the St. Louis Smelting and Refining Company was producing significant quantities of lead-silver ore from mines on CHC Hill. This modest resurrection, however, was cut short by the Great Depression of 1929. The town closed down and the railroad ceased operating.

By the late 1930's, Rico was at its lowest point ever. Down-county forces even went so far as to try to have the county government dissolved. Although the plan to merge Dolores into Montezuma County failed, proponents did succeed in having the county seat moved from Rico to Dove Creek. This was quite a blow to the morale of the proud mining town.

### War-time Revival

Even in those dark days, though, there were stirrings that presaged better times. In 1943 the Rico Argentine Co. consolidated many of the district's properties and began producing the base metals needed to prosecute the war effort. By 1946, 10 of the district's old mines were operating once again, including the Atlantic Cable, Nora Lily, Pro Patria, Revenue, Rico-Argentine, Rico-Aspen, St. Louis, Van Winkle, and Yellow Jacket. There was also one vanadium mine being worked. Overall, the county was the state's sixth best producer, ranking fourth in copper, lead, and zinc. It had never ranked this high during its silver days.

Dolores County maintained this level of activity even after the war ended. In 1953, for example, it still ranked fifth among Colorado counties.

## Sulfuric Acid Production

In 1954 the uranium boom was happening on the Colorado plateau and Rico was able to turn this circumstance to its advantage. The recovery of uranium required leaching the ores in either an alkaline or acidic bath. The acid treatment seems to have been preferred, as it was used by the mills at Grand Junction, Rifle, Maybell, Durango, Gunnison, and Uravan. Sulfuric acid was needed for this and Rico had an abundance of pyrite from which it could be made. Accordingly, in October 1955, the Rico Argentine Co. built a \$1.5 million sulfuric acid plant at the portal of the St. Louis tunnel just above town. This was the first sulfuric acid plant to be built at a single mine in Colorado.

By 1957 over 5,000 tons of pyrite were being processed per month and pyrite became a more valuable product than any of the other minerals. This continued until 1963, when the RAMCO acid plant started operating intermittently as uranium milling declined and the demand for sulfuric acid dropped. By 1964 lead overtook pyrite in value and the plant closed soon thereafter. The multicolored tailings ponds still remain, as does a hillside of dead trees above the plant, killed by fumes from the sulfuric acid-making process.

## Recent Depression

In the late 1960's, the Silver Clad Mine sent ore to Ophir to be milled and zinc became the county's metal of primary value. The drop of base metal prices in the 1970's, however, closed the Rico mines and the town declined again.

Rico may be on the verge of another revival, though. In 1980, the Anaconda Co. bought up nearly two sections of mining claims on Newman, CHC, and Nigger Baby Hills - virtually the entire Pioneer Mining District. Anaconda is engaged in drilling the land and is also conducting its own inactive mines program on its new properties. Hazards are being eliminated at the company's own expense.

If Anaconda finds valuable minerals, Rico may boom for a fourth time in its century-old existence.

## Chronology

- 1831 St. Louis Fur Co. trappers to Dolores headwaters.
- 1860 First prospectors in area, from Baker's party in Silverton.
- 1866 Another party of prospectors to the Rico vicinity.

- 1869 First claims located by Shafer and Fearheiler. Pioneer Mining District established and first log cabin built.
- 1870 R.C. Darling to area; Atlantic Cable located.
- 1872 Darling returns with financial backing; adobe smelting furnace operated briefly.
- 1875 Hayden survey to area.
- 1878 Prospectors return to area.
- 1879 Silver ore found on Newman Hill; Rico founded.
- 1880 Grand View smelter begins operations.
- 1881 Dolores County formed; raid against Utes.
- 1882 Uprising against Chinese; second smelter operates.
- 1887 Enterprise blanket deposit discovered; beginning of boom.
- 1891 Enterprise sold to English syndicate for \$1.25 million; Rio Grande Southern Railroad to town.
- 1893 Silver Panic devastates Rico.
- 1898 Knight Investment Co. tries to operate Rico mines.
- 1901 Mines consolidated under United Rico Mining Co.
- 1904 Watershed date: Before this silver most important mineral in county; after, lead and zinc gain prominence.
- 1925 R.I. Pellett enters district and opens mines.
- 1938 Rico at low point.
- 1943 Rico Argentine consolidation.
- 1955 Rico Argentine builds sulfuric acid plant.
- 1980 Anaconda buys district.



## EVALUATION OF INACTIVE MINES

There is much renewed mining and exploration activity in Dolores County. The largest potential operator in the Rico Area is the Anaconda Corporation. Anaconda has acquired a large portion of the historically mined area around Rico. Most of the inactive mines are adjacent to areas under active exploration.

Ten fairly large mining areas were investigated in Dolores County during the inventory project. Mine features considered significant are one extremely hazardous shaft, 10 dangerous adits, and two dangerous shafts. Four adits were observed to be discharging acid mine drainage. The tailing ponds are located within the channel of Silver Creek.

These mine sites are rendered slightly less dangerous because of the resurgence of mining activity and the presence of landowners to control access. Approximately 54 acres of surface area have been visibly disturbed by past metal mining activities around Rico and Dunton.

Five inactive uranium mines are on record for Western Dolores County. These sites could not be located in the field. A summary of mine features observed in Dolores County is provided in Table I. Additional information about specific mines is presented in Table II and shown on the Dolores County map.

**TABLE I:**  
**SUMMARY OF INVENTORIED HARD ROCK MINE FEATURES**  
**DOLORES COUNTY**

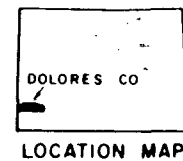
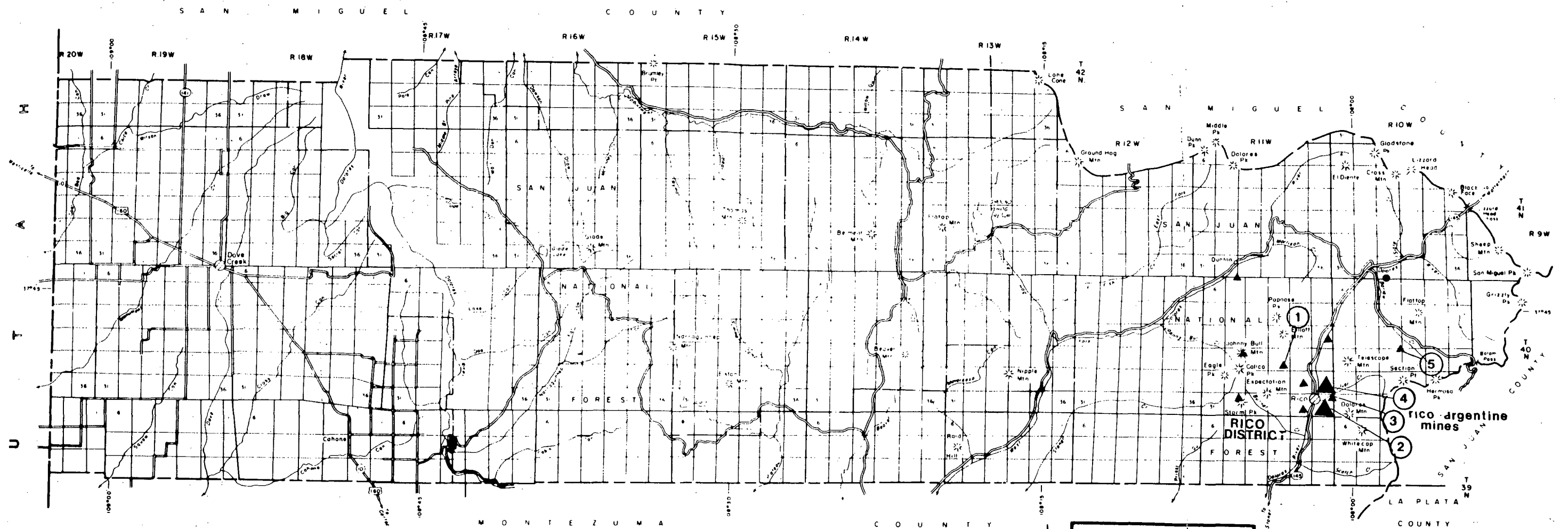
	Extreme Hazards	Dangerous Mine Features	Environmental Impacts	Non Hazardous Features	Total Features Encountered
Shafts	1	--	--	19	20
Adits & Inclines	--	12	4	68	84
Stopes	--	--	--	--	--
Pits	1	--	--	--	1
Mine Dumps	--	--	--	38	38
Mill Tailings	--	--	--	3	3
Structures	--	2	--	--	2
Total	2	14	4	128	148

Estimated acreage disturbed by past hard rock mining activities: 54.

TABLE II:

## MINE SITES WITH SIGNIFICANT SAFETY OR ENVIRONMENTAL PROBLEMS IN DOLORES COUNTY

MAP INDEX NO.	MINE/SITE NAME SITE I.D. NO.	COMMODITY MINED	EXTREME HAZARDS	DANGEROUS MINE FEATURES	ENVIRONMENTAL IMPACTS	TOTAL ACREAGE DISTURBED
1	PUZZLE MINE 1491-58/78-01	Metal		Open shaft	Acid mine drainage	.2
2	RICO MINES 1491-62/74-01	Metal		Open adit, Open shaft, 2 structures		8
3	ST. LOUIS TUNNEL 1491-62/74-01	Metal	Open shaft pit	5 adits	4 acid mine drainage discharges 3 tailings ponds	30
4	NORA, LILY, FALCON, WELLINGTON 1491-62/77-01	Metal		2 adits		12
5	BARLOW CREEK 1492-39/80-01	Metal		4 adits		3



# EXPLANATION

- Inactive coal mines
- Groupings of inactive coal mines
- ▲ Inactive metal mines
- ▲ Groupings of inactive metal mines
- Inactive uranium or industrial materials
- Groupings of inactive Uranium or industrial material sites
- ⊗ Strip mine or open pit
- ⑦ Index number for hazardous or problem mine sites

DOLORES COUNTY  
COLORADO

0 1 2 3 4 5 MILES

## HYDROLOGY

Dolores County is part of the watershed of the Dolores River. Much of the county is made up of dissected sedimentary uplands. The streams have flat gradients and meander across wide valleys. Only the eastern third of the county contains mountainous terrain with steep gradient streams. Highflow values occur as the result of spring snowmelt. Metal concentrations in the mainstem of the Dolores are somewhat elevated. Mining in the vicinity of Rico has caused the major portion of the metals problem. Tailings are in the river channel and at least four adits discharge acid mine drainage.

Ground water is present in the sedimentary rocks under the county and in alluvial valley fills associated with the mainstem of the Dolores. Coal is also present and is found in the rocks of the Dakota Formation. This coal has not been mined. Thus, there are no impacts to ground water quality.

## FLORA AND FAUNA

Dolores County is comprised of mountainous terrain in the east, rolling hills and plains in the central portion, and mesas and rolling topography in the west.

The west is dominated by sagebrush and pinon-juniper forest. Montane forest dominates the south central part of the county. Oakbrush interspersed with pockets of grasslands of the foothills and mountain valleys are found in the north central area. The east is comprised primarily of subalpine forest with one area of grasslands of the foothills and mountain valleys. Pockets of montane forest and alpine tundra are found along the eastern county boundary.

### THREATENED OR ENDANGERED

#### MAMMALS, BIRDS OR FISH SPECIES

Common Name	Scientific Name	Location in County
American Peregrine Falcon	Falco Peregrinus Anatum	Western part
Bald Eagle	Haliaeetus Leucocephalus	Winter use of major rivers and reservoirs

THREATENED or ENDANGERED Plant Species: None.

## SOCIO-ECONOMIC AND DEMOGRAPHIC PROFILE

The 1980 population of Dolores County was 1,657, a 1.0% increase since the 1970 census. The town of Rico suffered a loss of 200 people in the 10 year period resulting in a population of 75, while Dove Creek (the county seat) recorded a population of 824 and the unincorporated area, 758.

The population loss in Rico is attributed primarily to the closing of the Rico Acid Plant.

Mining was important to the County's early economic development and today the Anaconda development could well bring another spurt of economic activity to Rico. Agriculture and tourism are the most stable components supporting the local economy, with tourism of increasing importance.

The 1980 annual average resident labor force for Dolores County was 554 with total employment at 532, an unemployment rate of 4.0% compared with a state unemployment rate of 3.5%. Seventy-five percent of the residents were employed in non-agricultural industries, 20% were employed in agriculture and 5% self or privately employed.

The 1979 per capita personal income was \$6,144 compared with the state per capita personal income of \$9,114.

The following table represents Wage and Employment covered by unemployment insurance by industrial sector for the 2nd Quarter of 1980. Total average monthly employment for the county was at 336. Government and services ranked highest in terms of number of employees and total wages paid.

COLORADO EMPLOYMENT AND WAGES  
COVERED BY UNEMPLOYMENT INSURANCE  
2ND QUARTER 1980

DOLORES COUNTY

DIVISION	UNITS	TOTAL WAGES	AVERAGE MONTHLY EMPLOYMENT	AVERAGE MONTHLY WAGES
Federal Government	6	226,523	64	1,174
State Government	4	17,107	5	1,064
Local Government	8	255,637	126	676
Total Government	18	499,267	196	851
Private				
*Mining				
*Manufacturing				
Trans. & Utilities	3	145,258	36	1,358
*Wholesale Trade				
Retail Trade	9	80,745	51	524
*Fin. Ins. & Re.				
Services	12	110,271	54	685
Total Private	24	336,274	141	797
County Total	42	835,541	336	828

\*Data cannot be released due to confidentiality. Data for these industries is included in services.

Services includes data that has not been classified by industry.

## RECREATION

Although the most intensively mined area of the county around Rico is also one of its most scenic, there is little recreational pressure there. Hunting, fishing, and backpacking in the east end generally take place further north in the Lizard Head and Dunton areas. In the west end, rafting down the Dolores River canyon and jeeping are popular.

In 1980 the U.S. Forest Service reported 92,500 visitor days spent at recreation sites in the County. These sites include four USFS maintained campgrounds with 69 units. Numerous other unofficial campsites are located along various USFS roads, jeep roads, and trails. Popular outdoor recreation areas include the Wilson Mountains Primitive Area, the area around Dunton, Narraguineep Natural Area, and Groundhog Reservoir.

## AESTHETICS

This county stretches from the mesa country at the Utah border eastward to the rugged Wilson and La Plata Mountains. The deep Dolores River Canyon which traverses the west end has its headwaters east of Rico. Most of the past mining in the county was centered around this town. Some evidence of that activity is visible from Colorado 145 but is a fairly minor part of the largely mountainous landscape.



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### Maps

Two USGS 7.5' topographic quadrangle maps were used in the inventory: Rico (1491), and Dolores Peak (1434).